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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/561,778	12/20/2005	Hidenobu Wakita	601560-20US (04P604US/P36)	4349
53992 7590 02/26/2010 Panitch Schwarze Belisario & Nadel LLP PANASONIC ONE COMMERCE SQUARE 2005 MARKET STREET SUITE 2200 PHILADELPHIA, PA 19103				
EXAMINER WANG, EUGENIA				
ART UNIT 1795		PAPER NUMBER		
NOTIFICATION DATE 02/26/2010		DELIVERY MODE ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

usptomail@panitchlaw.com

Office Action Summary

Application No.

10/561,778

Applicant(s)

WAKITA ET AL.

Examiner

EUGENIA WANG

Art Unit

1795

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 January 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 18-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 18-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/GS/US)
Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on January 22, 2010 has been entered.

Response to Amendment

2. In response to the amendment received January 22, 2010:
- a. Claims 1 and 18-20 are pending.
 - b. It is noted that JP 2003-317783 (Shuji et al.) has been withdrawn as reference relied upon within the rejection in light of the translation, the amendments, and the arguments set forth. (Details set forth below.) It is noted that US 6,551,732 (Xu) is still relied upon in the same manner (in a new and different combination). Furthermore, it is noted that stylistic changes have been made to reflect the style of the new Examiner.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 19-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a. Claims 19 and 20 recites the limitation "said sulfur oxide absorbing portion" in lines 1-2 and line 2, respectively. There is insufficient antecedent basis for this limitation in the claim. (It is noted that claim 1, which claims 19 and 20 are dependent up state an adsorbing portion not an absorbing portion. Accordingly, it is unsure whether or not claims 19 and 20 have a separate absorbing portion or that the absorbing portion was meant to refer back to the adsorbing portion of claim 1. Thus, the claim language is seen to be indefinite. (For the prosecution of the instant application, it is interpreted that the absorbing portions of claims 19 and 20 refer to the adsorbing portion of claim 1, pending clarification.)

b. Claim 20 appears to contradict claim 1, which is dependent from. Claim 1 requires the presence of an adsorbing portion as well as a catalytic combustor disposed upstream of the adsorbing portion. However, claim 20 states that the combustor functions as the adsorbing portion. It is uncertain how if the catalytic portion can be upstream from the adsorbing portion if it is the adsorbing portion (i.e. that it is upstream from itself). (Paragraph 0067 of the disclosure appears to suggest that the combusting and the catalytic adsorbing happens as substantially the same place.) Accordingly, such claim language is found to be indefinite. (For the prosecution of the instant application, it is interpreted that any adsorbing

portion a catalytic combustor upstream can be considered a "composite catalytic combustor" and can read on the claim language, pending clarification.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 1 and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,551,732 (Xu) in view of US 2004/0247985 (Takebe et al.).

As to claim 1, Xu teaches a fuel cell power system [10] with a reformer [6] configured to generate a hydrogen-rich gas containing carbon monoxide from a fuel containing a hydrocarbon and water (fig. 1; col. 2, lines 42-57), a shift converter (water-gas shift reactor [7]) configured to generate hydrogen and carbon dioxide from carbon monoxide and water (fig. 1; col. 5, lines 64), a carbon monoxide removing portion (oxidation reactor [8]) configured to reduce carbon monoxide that has not been removed from the shift converter (water-gas shift reactor [7]) (fig. 1; col. 5, line 60 to col. 6, line 3). It is noted that after processing, the fuel is sent to the anode and the air (oxidizing gas) is sent to the cathode, wherein these two reactants are used in a fuel cell to produce electric energy (power) (col. 1, lines 18-24; col. 5, lines 54-63). As seen in fig. 1, there is an air supply portion (compressor [1] fed with air [100]). This is considered upstream to reformer [6], as it feeds into it (fig. 1).

Xu does not recognize the claimed impurity removing means for the air supply portion, specifically that there is a sulfur oxide adsorbing portion with at least one of an adsorbing agent and absorbing agent of the sulfur oxide and a catalytic combustor

disposed upstream of the sulfur oxide adsorbing portion and configured to oxidize hydrogen sulfide into sulfur oxide.

Takebe et al. teach of an air purifier for a fuel cell (abs; fig. 1). It is noted that there is a sulfur oxide adsorbing portion (second pollutant removing means [24]) adsorbs using an adsorbing agent (porous material carrying permanganate, alkali salts, alkaline hydroxides, alkaline oxides) (para 0037). Additionally, there is a catalytic combustor (first pollutant-removing means [22] and heating means [25]) disposed upstream of the adsorbing portion (second pollutant removing means [24]) (fig. 1). It is noted that the catalytic combustor (first pollutant-removing means [22] and heating means [25]) includes a catalyst, wherein heat is applied such that hydrogen sulfide is oxidized to sulfur dioxide (combustion) (para 0033-0034). The motivation for wanting provide the cleaning system of Takebe et al. to the fuel cell system of Xu et al. is to remove pollutants from air to enable the fuel cell to maintain a high output voltage for an extend period of time (para 0007). Therefore it would have been obvious to one having ordinary skill in the art at the time the claimed invention was made to include the pollutant removal system of Takebe et al. in that of Xu et al. in order to enable the fuel cell to maintain a high output voltage for an extend period of time.

As to claim 18, the combination renders the claim limitation obvious, as the combination would yield the combustor (first pollutant-removing means [22] and heating means [25]) of Takabe et al. would be placed upstream of the hydrogen generator of Xu, as Takabe et al. teaches of removing pollutants prior to feeding to the fuel cell (fig. 1 of Takabe et al.) and Xu shows that the exhaust from the fuel cell feeds to the hydrogen

generator (fig. 1 of Xu). Accordingly, the combustor is positioned to exchange heat with an exhaust gas resulting from combustion (as any residual heat would go through the system and eventually be indirectly fed to the hydrogen generator), barring specification as to what constitutes "positioned to exchange heat." Office personnel are to give claims their broadest reasonable interpretation in light of the supporting disclosure. *In re Morris*, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027-28 (Fed. Cir. 1997). Also, limitations appearing in the specification but not recited in the claim are not read into the claim. See *In re Zletz*, 893F.2d 319, 321-22, 13 USPQ2d, 1320, 1322 (Fed. Cir. 1989).

As to claim 19, the combination renders the claim limitation obvious, as the combination would yield the combustor (first pollutant-removing means [22] and heating means [25]) and sulfur oxide adsorbing portion (second pollutant-removing means [24]) of Takabe et al. would be placed upstream of the hydrogen generator of Xu, as Takabe et al. teaches of removing pollutants prior to feeding to the fuel cell (fig. 1 of Takabe et al.) and Xu shows that the exhaust from the fuel cell feeds to the hydrogen generator (fig. 1 of Xu). Accordingly, the sulfur oxide adsorbing portion is positioned to exchange heat with an exhaust gas resulting from combustion (as it is downstream the combustor, wherein any residual heat would go through the system and eventually be indirectly fed to the hydrogen generator), barring specification as to what constitutes "positioned to exchange heat." Office personnel are to give claims their broadest reasonable interpretation in light of the supporting disclosure. *In re Morris*, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027-28 (Fed. Cir. 1997). Also, limitations appearing in the

specification but not recited in the claim are not read into the claim. See *In re Zletz*, 893F.2d 319, 321-22, 13 USPQ2d, 1320, 1322 (Fed. Cir. 1989).

As to claim 20, the combination renders the claim limitation obvious, as the combination would yield the a composite catalytic combustor (made of combustor (first pollutant-removing means [22] and heating means [25]) and sulfur oxide adsorbing portion (second pollutant-removing means [24]) of Takabe et al.) would be placed upstream of the hydrogen generator of Xu, as Takabe et al. teaches of removing pollutants prior to feeding to the fuel cell (fig. 1 of Takabe et al.) and Xu shows that the exhaust from the fuel cell feeds to the hydrogen generator (fig. 1 of Xu). Accordingly, the composite catalytic combustor (as defined above) positioned to exchange heat with an exhaust gas resulting from combustion (as it is downstream the combustor, wherein any residual heat would go through the system and eventually be indirectly fed to the hydrogen generator), barring specification as to what constitutes "positioned to exchange heat." Office personnel are to give claims their broadest reasonable interpretation in light of the supporting disclosure. *In re Morris*, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027-28 (Fed. Cir. 1997). Also, limitations appearing in the specification but not recited in the claim are not read into the claim. See *In re Zletz*, 893F.2d 319, 321-22, 13 USPQ2d, 1320, 1322 (Fed. Cir. 1989). Furthermore, it is noted that such the composite catalytic combustor of Takabe et al. has two catalyst materials – first pollutant-removing means [22] embodies the use of noble metal catalysts, while second pollutant-removing means embodies alkaline hydroxides and alkaline oxides (alkaline earth metal containing) (para 034; para 0037-0038).

5. Claims 1 and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Xu in view of US 2002/0150805 (Stenersen et al.) and US 2003/0143129 (Rabellino et al.) as evidenced by Takebe et al.

As to claim 1, Xu teaches a fuel cell power system [10] with a reformer [6] configured to generate a hydrogen-rich gas containing carbon monoxide from a fuel containing a hydrocarbon and water (fig. 1; col. 2, lines 42-57), a shift converter (water-gas shift reactor [7]) configured to generate hydrogen and carbon dioxide from carbon monoxide and water (fig. 1; col. 5, lines 64), a carbon monoxide removing portion (oxidation reactor [8]) configured to reduce carbon monoxide that has not been removed from the shift converter (water-gas shift reactor [7]) (fig. 1; col. 5, line 60 to col. 6, line 3). It is noted that after processing, the fuel is sent to the anode and the air (oxidizing gas) is sent to the cathode, wherein these two reactants are used in a fuel cell to produce electric energy (power) (col. 1, lines 18-24; col. 5, lines 54-63). As seen in fig. 1, there is an air supply portion (compressor [1] fed with air [100]). This is considered upstream to reformer [6], as it feeds into it (fig. 1).

Xu does not recognize the claimed impurity removing means for the air supply portion, specifically that there is (a) a sulfur oxide adsorbing portion with at least one of an adsorbing agent and absorbing agent of the sulfur oxide and (b) a catalytic combustor disposed upstream of the sulfur oxide adsorbing portion and configured to oxidize hydrogen sulfide into sulfur oxide.

With respect to (a), Stenersen et al. recognizes that pollutants such as oxides of nitrogen, oxides of sulfur, and hydrogen sulfide are within atmospheric air, and that

removal to such contaminants (prior to being introduced to the fuel cell) would allow fuel cells to be used in a wide range of environments (para 0009; fig. 1). Specifically, it is taught that a filtering system should have chemical removal portion to adsorb such materials (thus constituting a sulfur oxide adsorbing portion) (para 0090; para 0095-96). The motivation for having a filtering system to remove pollutants such as sulfur oxides from air (prior to being fed to the fuel cell) is to ensure the usability of such fuel cell in a wide range of environments (para 0009; see fig. 1). Therefore it would have been obvious to one having ordinary skill in the art at the time the claimed invention was made to include a sulfur oxide adsorbing portion (as taught by Stenersen et al.) would be to ensure the usability of fuel cells in a wide range of environments.

With respect to (b), Rabellino et al. teach of purifying to remove sulfur containing compounds and NO_x (nitrogen oxide) (para 0009). The process used is an oxygen catalyst unit [200] (combustor) that oxidizes contaminants in air and then allows them to be removed via adsorption (para 0032). (This is indication of combustion as CO₂ is stated to be formed from higher hydrocarbons; see para 0032.) It is noted that the oxidation catalyst is operated at a temperature of 300 °C (para 0042). In such a manner, it is noted that hydrogen sulfur (which is present in air, as set forth above) would inherently be oxidized to sulfur oxide.

Where applicant claims a composition in terms of a function, property or characteristic and the composition of the prior art is the same as that of the claim but the function is not explicitly disclosed by the reference, the examiner may make a rejection under both 35 U.S.C. 102 and 103, expressed as a 102/103 rejection.

The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. In re Rijckaert, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993).

"In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art." Ex parte Levy, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990)

In the case of the instant application the basis for expectation of inherency is that Rabellino et al.'s system has an oxidation catalyst present for oxidizing, wherein the temperature air is held at, 300°C, when in contact with such a oxygen catalyst unit is sufficient for causing hydrogen sulfide to oxidize to sulfur oxide. At this point Takabe et al. is relied upon to show that hydrogen sulfide indeed oxidizes at such a temperature, As Takabe et al. shows that sulfur oxides form in the presence of a catalyst at temperatures as low as 200°C (para 0033-0034).

The Examiner invites applicant to provide that the prior art products do not necessarily or inherently possess the characteristics of his [or her] claimed product.

Whether the rejection is based on inherency' under 35 U.S.C. 102, on prima facie obviousness' under 35 U.S.C. 103, jointly or alternatively, the burden of proof is the same...[footnote omitted]." The burden of proof is similar to that required with respect to product-by-process claims. In re Fitzgerald, 619 F.2d 67, 70, 205 USPQ 594, 596 (CCPA 1980) (quoting In re Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433-34 (CCPA 1977)).

Accordingly in such a manner, the combination of Rabellino et al. with Xu and Sternsen et al. would result in the claimed invention (as the combination has a sulfur oxide adsorbing portion with a catalytic combustor disposed upstream, since Rabellino et al.'s system oxidizes prior to adsorbing, as set forth above). The motivation for wanting to apply the system of Rabellino et al. (i.e. oxidizing contaminants in air prior to adsorbing them) is that the use of such a system provides air filtration wherein adsorption requires less maintenance (para 0012). Therefore it would have been obvious to one having ordinary skill in the art at the time the claimed invention was made to have applied the system of Rabellino et al. to the combined teachings of Xu and Sternsen et al. in order to provide a system that requires less maintenance. Furthermore, at the very least the application of such a system (oxidizing and then adsorbing) would have provided the predicable of helping to purify air. Therefore it would have been obvious to one having ordinary skill in the art at the time the claimed invention was made to use such a system, as the application of it would have yielded the predictable result of providing purified air to the necessary system. (Note: Rabellino et al. is combinable with Sternsen et al., as applied to Xu, as both are focused with air pollution removal.)

As to claim 18, the combination renders the claim limitation obvious, as the combination would yield the combustor (oxygen catalyst unit [200]) of Rabellino et al. would be placed upstream of the hydrogen generator of Xu, as Stenersen et al. teaches of removing pollutants prior to feeding to the fuel cell (fig. 1 of Stenersen et al.) and Xu shows that the exhaust from the fuel cell feeds to the hydrogen generator (fig. 1

of Xu). Accordingly, the combustor is positioned to exchange heat with an exhaust gas resulting from combustion (as any residual heat would go through the system and eventually be indirectly fed to the hydrogen generator), barring specification as to what constitutes "positioned to exchange heat." Office personnel are to give claims their broadest reasonable interpretation in light of the supporting disclosure. *In re Morris*, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027-28 (Fed. Cir. 1997). Also, limitations appearing in the specification but not recited in the claim are not read into the claim. See *In re Zletz*, 893F.2d 319, 321-22, 13 USPQ2d, 1320, 1322 (Fed. Cir. 1989).

As to claim 19, the combination renders the claim limitation obvious, as the combination would yield the combustor (oxygen catalyst unit [200] of Rabellino et al.) and sulfur oxide adsorbing portion (filter assembly [10] of Stenerson et al.). would be placed upstream of the hydrogen generator of Xu, as Stenerson et al. teaches of removing pollutants prior to feeding to the fuel cell (fig. 1 of Stenerson et al.) and Xu shows that the exhaust from the fuel cell feeds to the hydrogen generator (fig. 1 of Xu). Accordingly, the sulfur oxide adsorbing portion is positioned to exchange heat with an exhaust gas resulting from combustion (as it is downstream the combustor, wherein any residual heat would go through the system and eventually be indirectly fed to the hydrogen generator), barring specification as to what constitutes "positioned to exchange heat." Office personnel are to give claims their broadest reasonable interpretation in light of the supporting disclosure. *In re Morris*, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027-28 (Fed. Cir. 1997). Also, limitations appearing in the

specification but not recited in the claim are not read into the claim. See *In re Zletz*, 893F.2d 319, 321-22, 13 USPQ2d, 1320, 1322 (Fed. Cir. 1989).

As to claim 20, the combination renders the claim limitation obvious, as the combination would yield the a composite catalytic combustor (made of combustor, oxygen catalyst unit [200], as rendered obvious by Rabellino et al. and sulfur oxide adsorbing portion, filter assembly [10], as rendered obvious by Stenersen et al.) would be placed upstream of the hydrogen generator of Xu, since Stenersen et al. teach of removing pollutants prior to feeding to the fuel cell (fig. 1 of Stenersen et al.) and Xu shows that the exhaust from the fuel cell feeds to the hydrogen generator (fig. 1 of Xu). Accordingly, the composite catalytic combustor (as defined above) positioned to exchange heat with an exhaust gas resulting from combustion (as it is downstream the combustor, wherein any residual heat would go through the system and eventually be indirectly fed to the hydrogen generator), barring specification as to what constitutes "positioned to exchange heat." Office personnel are to give claims their broadest reasonable interpretation in light of the supporting disclosure. *In re Morris*, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027-28 (Fed. Cir. 1997). Also, limitations appearing in the specification but not recited in the claim are not read into the claim. See *In re Zletz*, 893F.2d 319, 321-22, 13 USPQ2d, 1320, 1322 (Fed. Cir. 1989). Furthermore, it is noted that such the composite catalytic combustor of has two catalyst materials. The combustor (oxygen catalyst unit [200]) of Rabellino et al. has a catalyst, such as platinum or palladium (noble metals) (para 0042-0043). The sulfur oxide adsorbing

portion (filter assembly [10]) of Stenersen et al. embodies the use of materials such as calcium carbonate and calcium sulfate (calcium is an alkaline metal) (para 0091).

Response to Arguments

6. Applicant's arguments with respect to the claim have been considered but are moot in view of the new ground(s) of rejection.

It is noted that Shuji et al. has been withdrawn as a prior art reference, and thus all arguments directed at Shuji et al. or its combination with other references are moot. The reasons for withdrawal of the prior art reference are set forth herein. One reason for withdrawal includes the clarification with respect to the teaching of Shuji et al. (as shown in the translation provided by Applicant). It is submitted that a full certified translation has been obtained (and is submitted herein), wherein the disclosure does not give any indication that the burner is upstream of the impurity adsorbing system. For example, claim 1 of Shuji et al. states that the impurity removal apparatus feeds into the combustor. Furthermore, the combustor [70] of Shuji et al. is not stated to have a catalyst and thus cannot be reasonably said to be a catalytic combustor is configured to oxidize hydrogen sulfide into sulfur oxide (as applied to the new claim limitations).

However, it is noted that new rejections have been applied using Xu, Takebe et al., Stenersen et al., and Rabellino et al., as set forth above, wherein it is submitted that the new rejections read on the claimed invention.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to EUGENIA WANG whose telephone number is (571)272-4942. The examiner can normally be reached on 7 - 4:30 Mon. - Thurs., EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/E. W./
Examiner, Art Unit 1795

/PATRICK RYAN/
Supervisory Patent Examiner, Art Unit 1795